

A. SLOAN.

GRATE FOR STOVES AND FURNACES.

No. 343,500.

Patented June 8, 1886.

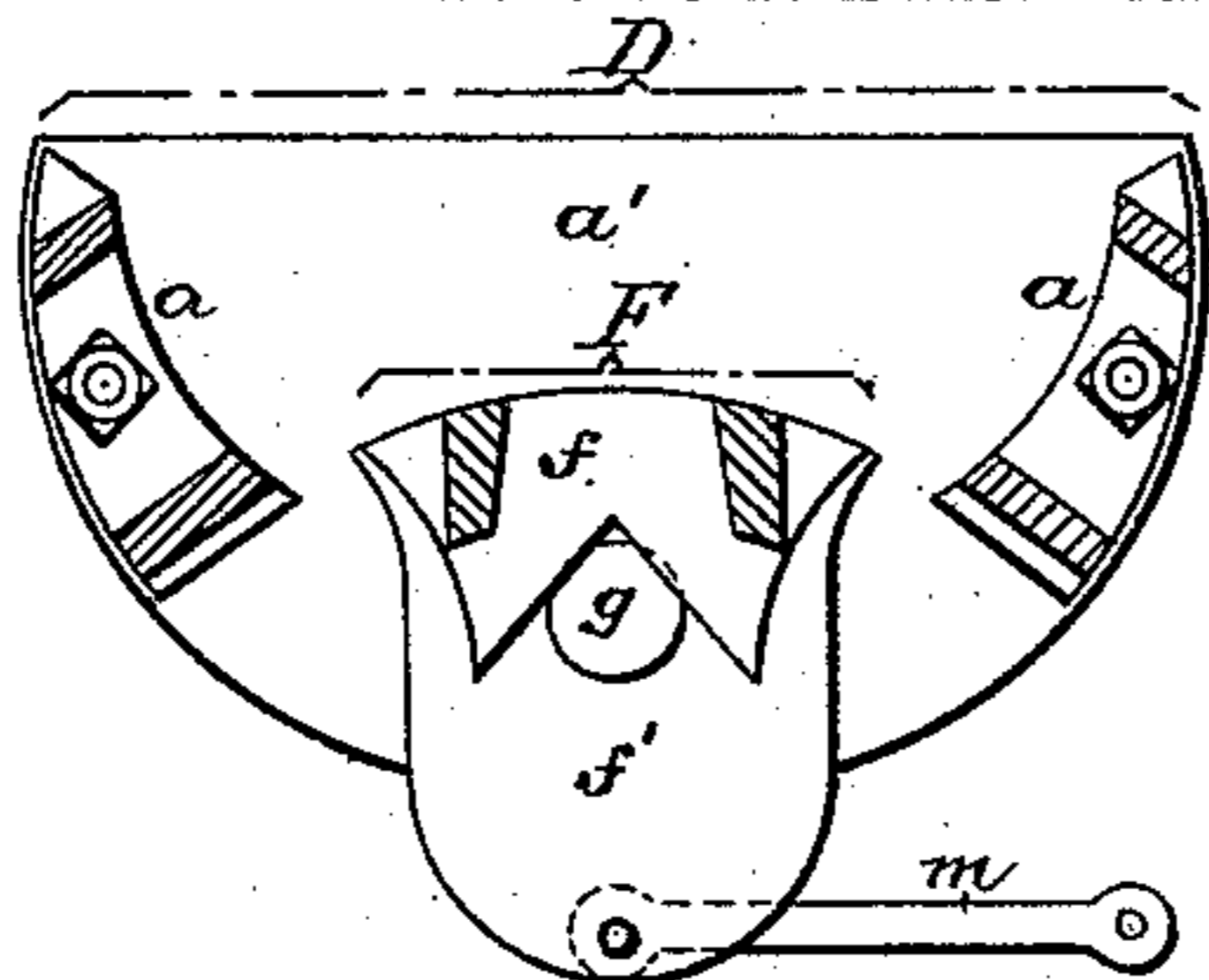
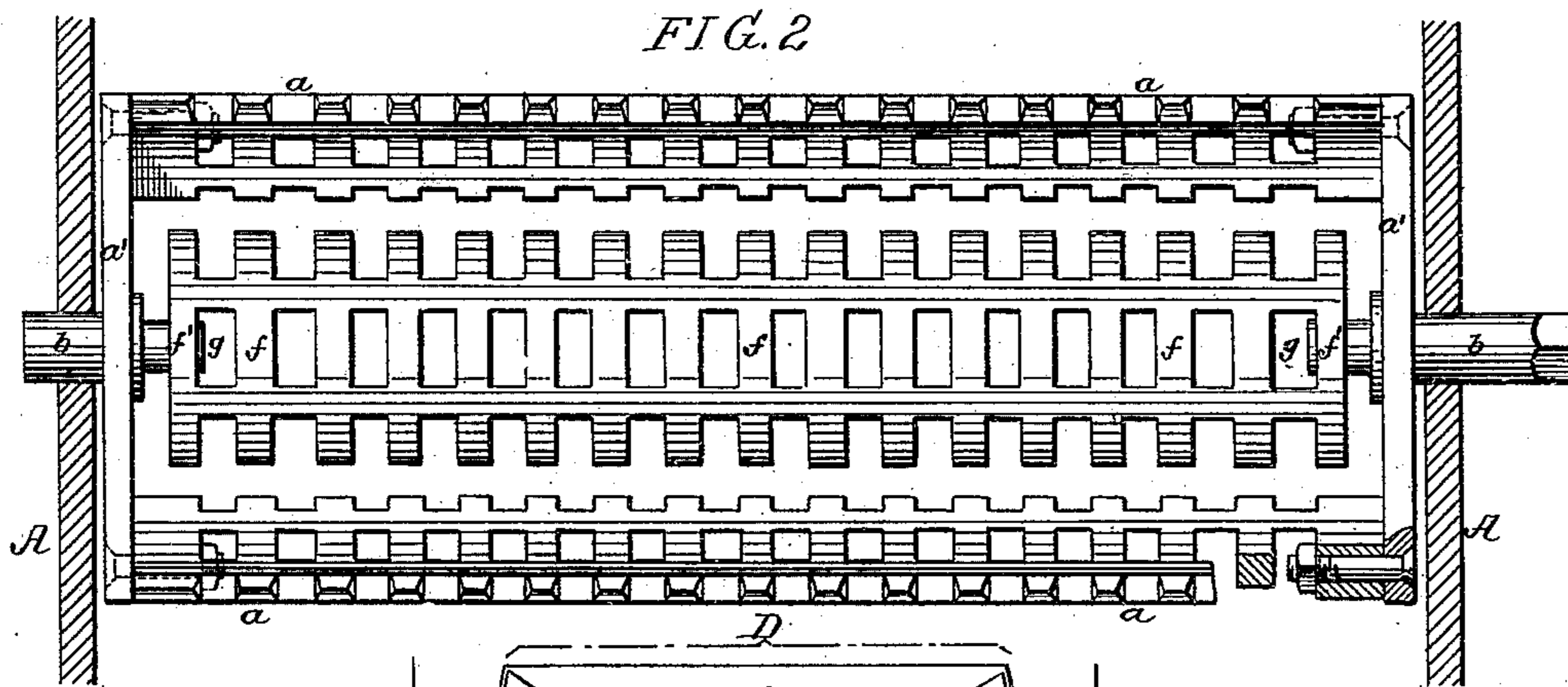
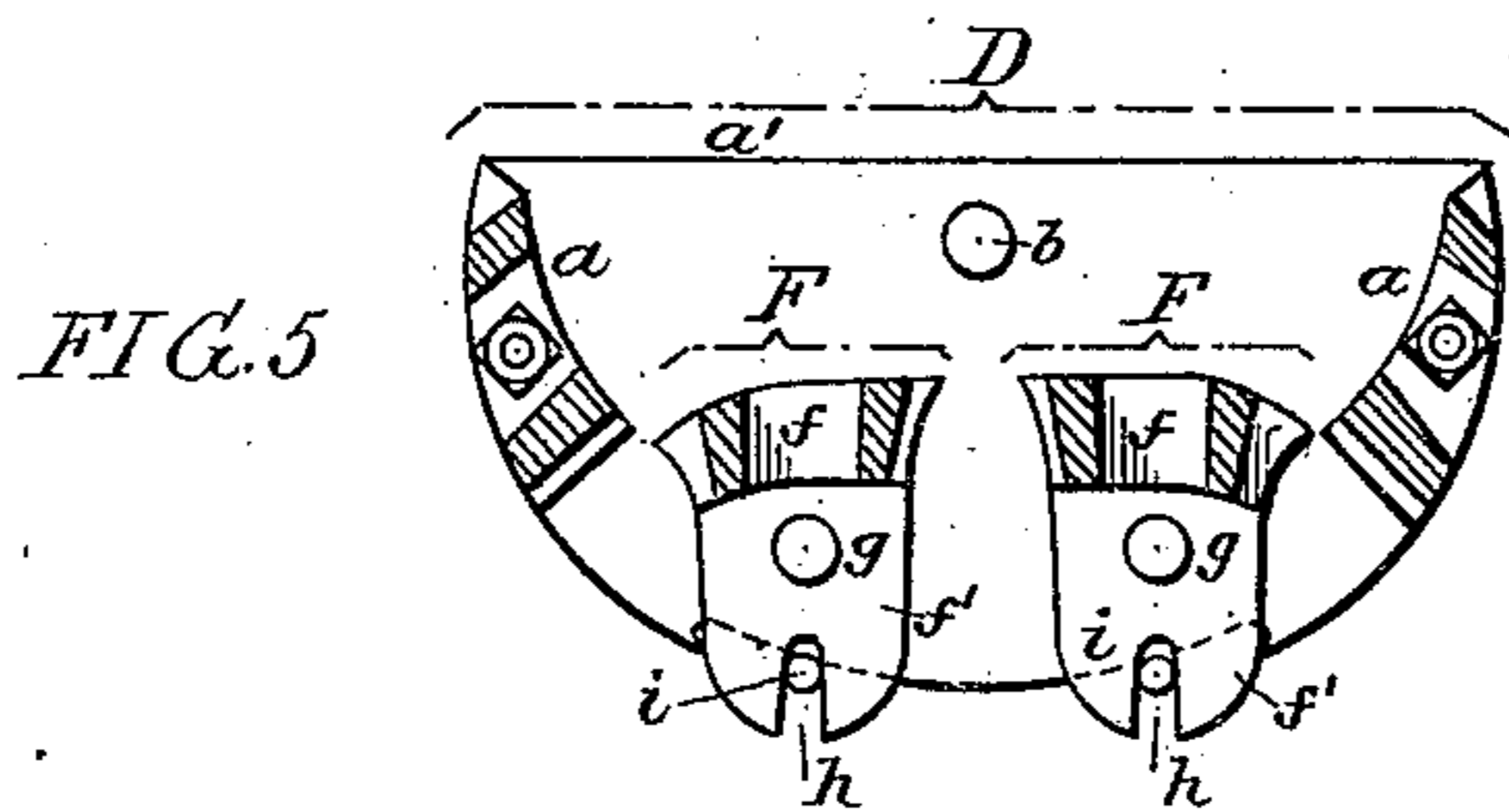
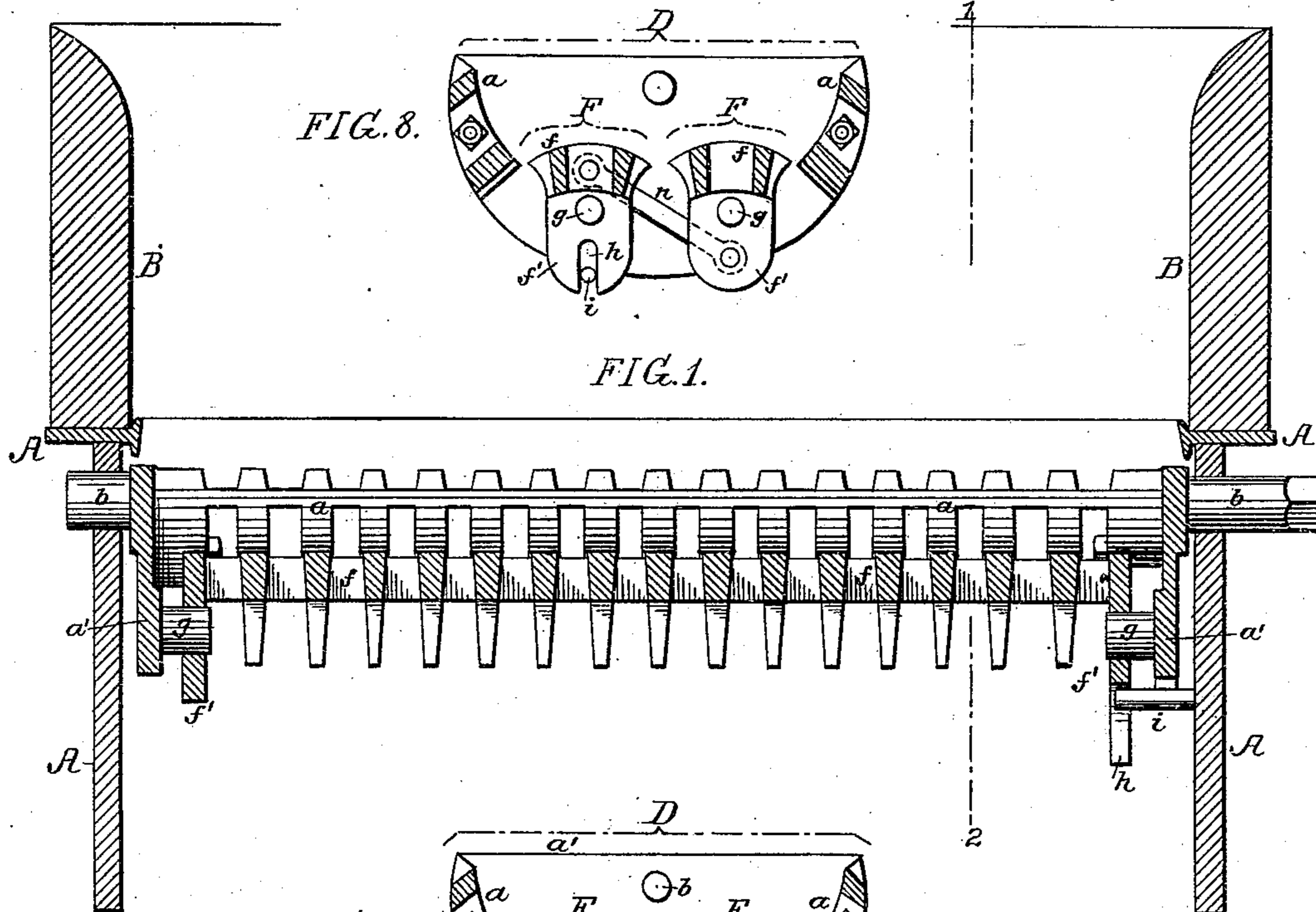


FIG. 7.

Witnesses.
Hamilton W. Turner,
Harry Drury.

Inventor:
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FIG. 4.

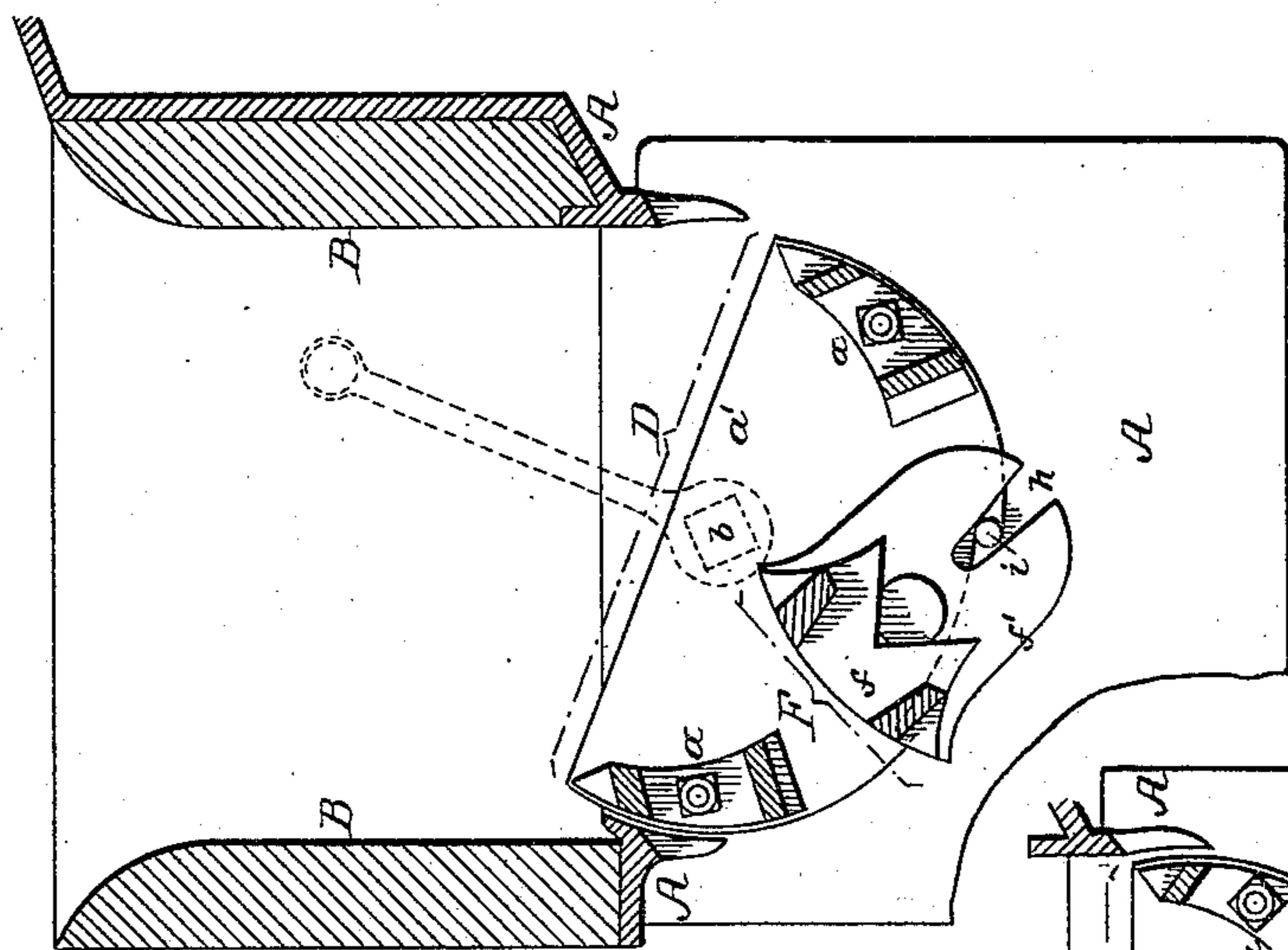


FIG. 6.

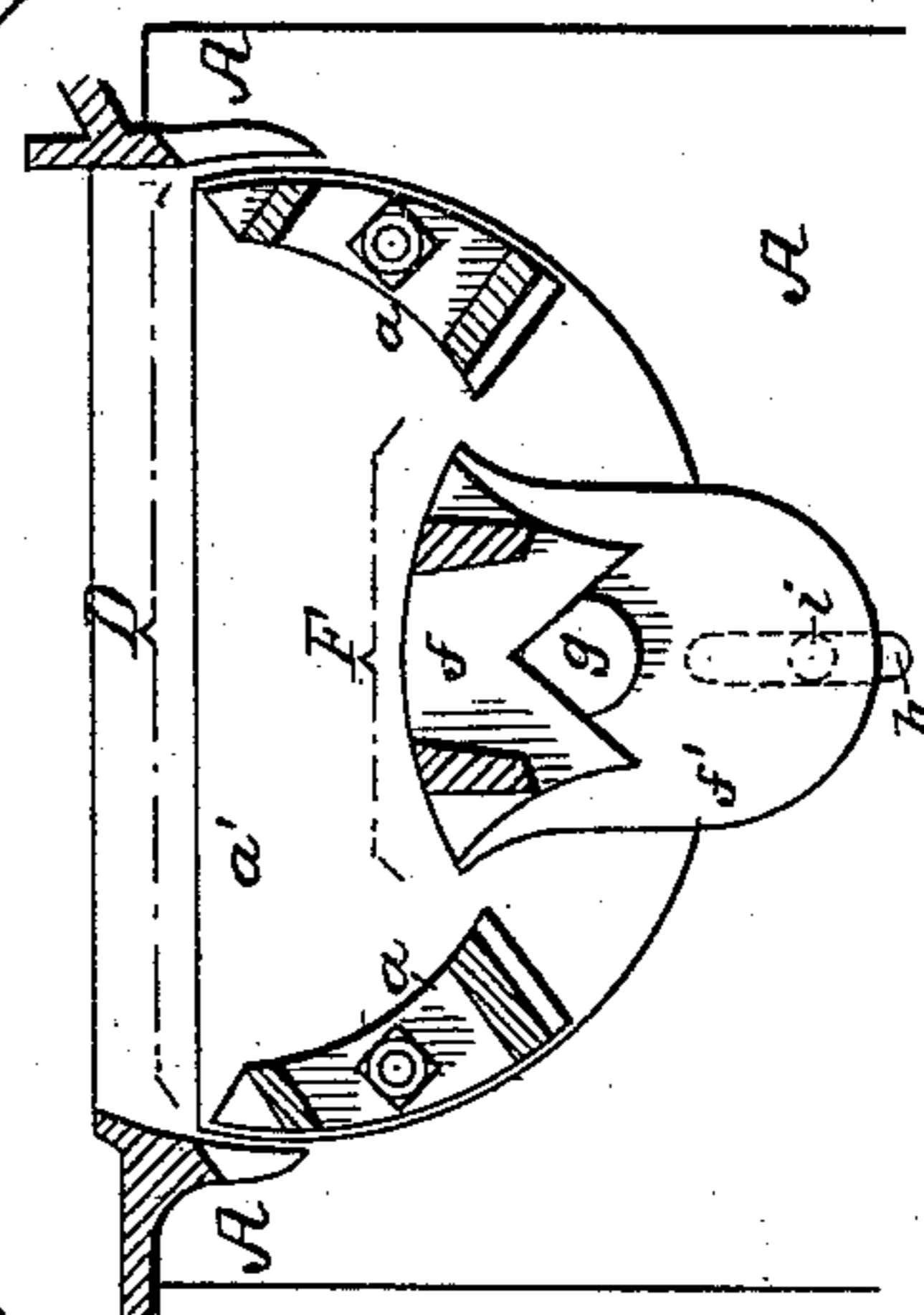
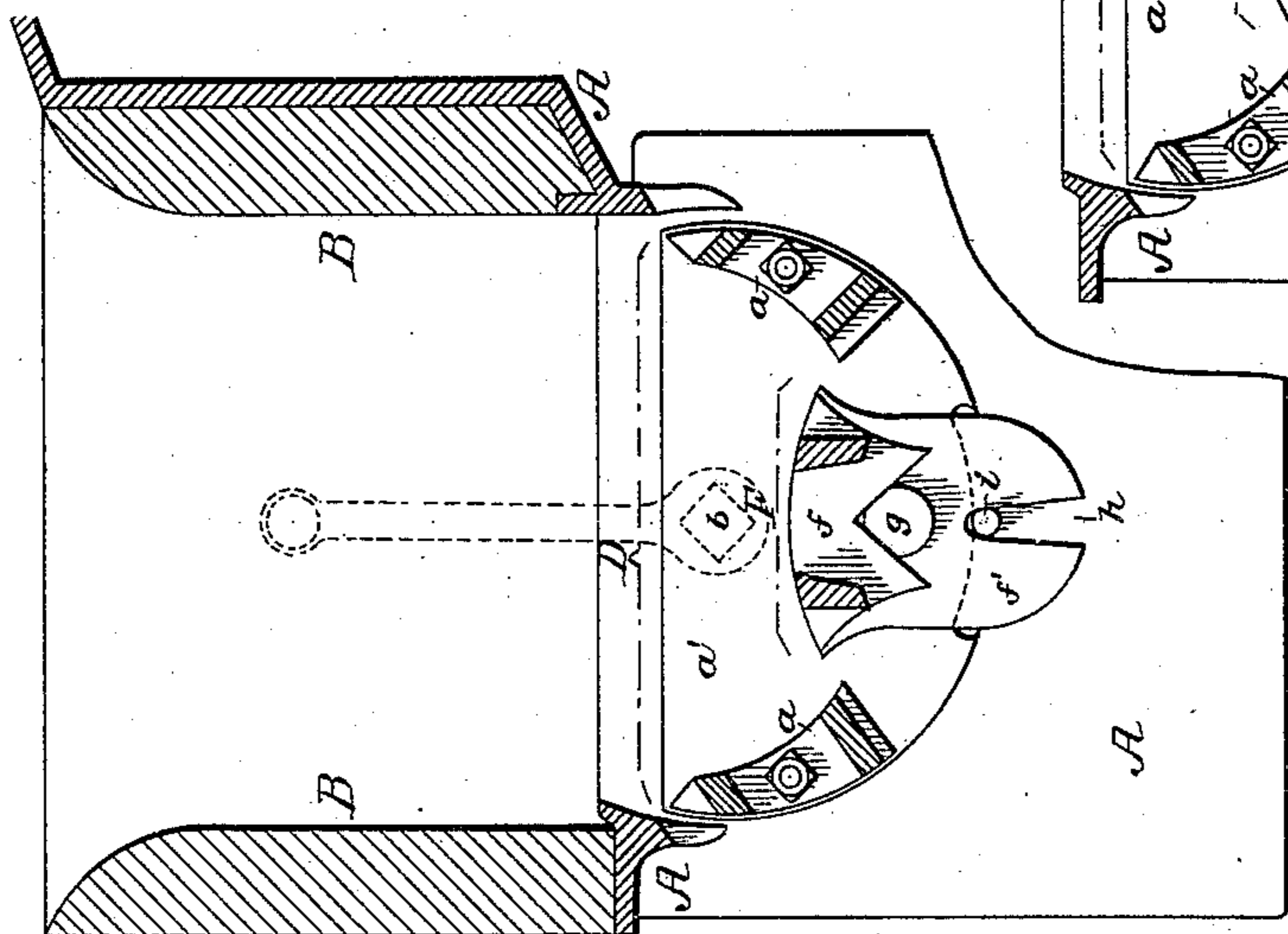


FIG. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

ALEXANDER SLOAN, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JOHN D. GREEN, OF SAME PLACE, AND LEWIS PUGHE, OF SCRANTON, PENNSYLVANIA.

GRATE FOR STOVES AND FURNACES.

SPECIFICATION forming part of Letters Patent No. 343,500, dated June 8, 1886.

Application filed October 10, 1885. Serial No. 179,497. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER SLOAN, a citizen of the United States, residing in Pittsburgh, Luzerne county, Pennsylvania, have invented certain Improvements in Grates for Stoves and Furnaces, of which the following is a specification.

One object of my invention is to so construct a shaking grate for stoves and furnaces as to provide for the thorough agitation of the contents of the fire-pot, and for an effective cutting up and discharge of the clinkers and ashes, a further object being to provide for the ready repairing of the grate when portions of the same become worn out.

In the accompanying drawings, Figure 1 is a longitudinal section of my improved grate, parts of the grate-frame and fire-pot being also shown; Fig. 2, a plan view partly in section; Figs. 3 and 4, transverse sections on the line 1 2, Fig. 1, showing the grate in different positions; and Figs. 5, 6, 7, and 8 sectional views showing modifications of my improved grate.

A represents part of the grate-frame, and B part of the brick lining, of the fire-pot of a stove or furnace.

The grate shown in Figs. 1 to 4 has two sections, D and F, the section D consisting of grated side bars, *a*, bolted at the opposite ends in the manner shown in Fig. 2 to end plates, *a'*, which have trunnions *b*, adapted to bearings in the end plates of the grate-frame A, one of said trunnions being squared or otherwise shaped at the end for the reception of a handle, whereby the shaking of the grate may be effected. The section F of the grate has grated bars *f* and end plates, *f'*, the latter having openings for the reception of pivot-pins *g* projecting from the end plates, *a'*, of the section D of the grate, and in one of the end plates, *f'*, is formed a slot, *h*, for the reception of a pin, *i*, projecting inward from one of the end bars of the grate-frame A. When the outer grate-section, D, is rocked on its trunnions, therefore, a rocking movement in an opposite direction is imparted to the central section, F, of the grate, owing to the fact that the lower portion of the end plate, *f'*, of the same is retained by the pin *i*, while the upper

portion of said plate is carried forward by the pivot-pin *g*, so that the grated bars of the section F serve, in conjunction with the like bars of the section D, to crush or grind the clinkers subjected to their action, the entire bed of fuel in the fire-pot being agitated by the movement of the grate, so as to insure the complete discharge of the ashes and clinkers into the ash-pit. One of the end plates, *a'*, is preferably recessed at the lower edge for the reception of the pin *i*, this recess determining the extent to which the grate can be rocked.

My invention is not limited to the use of a single central section in the grate, as more than this number can conveniently be used, if desired. For instance, in Fig. 5 I have shown a grate having two sections, F, each controlled by a pin, *i*, adapted to a slot in one of the end bars. The end bar may, if desired, have a pin adapted to a slot in the end frame, A, as shown, for instance, in Fig. 6, or the pin-and-slot connection may be discarded altogether, the connection of the lower portion of the section F of the grate to the fixed frame being effected by other means capable of causing the desired rocking of said section F on its pivots as the outer frame or section of the grate rocks on its trunnions, Fig. 7 showing one modification of this character, in which is used a link, *m*, pivoted at one end to the frame A and at the other end to the end plate, *f'*, of the section F of the grate.

In Fig. 8 I have shown a modification of the character shown in Fig. 5, but having the two sections F of the grate connected by a bar, *n*, extending from the upper part of one section to the lower part of the other section, one section being controlled by a pin, *i*. In this modification the sections F rock toward and from each other, instead of rocking in the same direction, as in the grate shown in Fig. 5.

Although the bars *a* and end plates, *a'*, may be cast in one piece, if desired, I prefer to secure the bars to the end plates by means of bolts and nuts, as shown, so that said bars can be readily replaced when worn out without necessitating the renewal of the entire grate.

I claim as my invention—

1. The combination of a fixed frame, a swing-

ing grate-section, D, and a section, F, pivoted to said section D, and having a connection with the fixed frame, whereby as the section D swings a rocking movement is imparted to said section F, all substantially as specified.

2. The combination of a fixed frame, a swinging grate-section, D, and a section, F, pivoted to said section D and having a slot-and-pin connection with the fixed frame, as described, whereby on swinging the section D a rocking movement will be imparted to the section F, all substantially as specified.

3. The combination of the fixed frame, the swinging grate-section D, the section F, pivoted to said section D and having an end plate with slot *h*, and a retaining-pin projecting from the fixed frame into said slot, whereby as the sec-

tion D swings the section F, under the influence of the retaining-pin, will be caused to rock on its pivot, all substantially as specified.

4. The combination of the fixed frame A, the grate-section D, pivoted to said frame and having a recessed end plate, the grate-section F, pivoted to the section D, and a pin, *i*, serving as a stop for the section D and as a retainer for the section F of the grate, all substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALEXANDER SLOAN.

Witnesses:

P. H. SHARP,
S. B. BENNETT.